Claims

1. A cellular telecommunications time division system, wherein a main station for a cell provides a defined frame structure, wherein each frame comprises a plurality of timeslots, each timeslot having at the end a guard period, the main station having means for transmitting data bursts within each time slot, and means for transmitting timing deviation signals to subsidiary stations within the cell,
each subsidiary station within the cell of the main station having means for adjusting its timing to received timing deviation signals, for adjusting the timing of uplink transmission bursts, characterised in that:
the guard period at the main station for a downlink slot followed by an adjacent uplink slot is longer than a guard period for an uplink slot followed by an adjacent downlink slot, whereby the cell size may be extended.

2. Apparatus for a cellular telecommunications time division system, including a main station for a cell including means providing a defined frame structure, wherein each frame comprises a plurality of timeslots, each timeslot having at the end a guard period, the main station including means for transmitting data bursts within a time slot, and means for transmitting timing deviation signals to subsidiary stations within the cell,
at least one subsidiary station within the cell of the main station having means for adjusting its timing to received timing deviation signals, for adjusting the timing of uplink transmission bursts, characterized in that
said means providing a defined frame structure is arranged to provide a guard period at the main station for a downlink slot followed by an adjacent uplink slot which is longer than a guard period for an uplink slot followed by an adjacent downlink slot, whereby the cell size may be extended.

3. A system according to claim 1 wherein the system is UMTS, and the main station is a Node B, and the subsidiary station is a UE.

4. A system according to claim 1 wherein the sum of the aforesaid guard periods, divided by two, is generally equal to the value of the guard period specified in an existing telecommunications standard.

5. A system according to claim 1 wherein said guard period between an uplink slot and a next following downlink slot is a minimal value, determined by practical timing constraints.

6. A system according to claim 1 wherein the timing deviation signal transmitting means is arranged, at the beginning of each downlink burst, to transmit a timing deviation signal.

7. A system according to claim 1, wherein the subsidiary station includes means to determine the time for transmission of an uplink slot from the timing deviation signal provided by the main station, and the known length of a downlink burst.

8. A system according to claim 1 wherein the system is symmetric, a time frame consisting of single downlink slots separated by single uplink slots.

9. A system according to claim 1 wherein the system is asymmetric, a time frame consisting of an unequal number of downlink slots and uplink slots, wherein the excess of uplink or downlink slots each have an associated guard period equal to the sum of the aforesaid guard periods, divided by two.

10. A method of time division access in a cellular telecommunications system, wherein a main station for a cell provides a defined frame structure, each frame comprises a plurality of timeslots, each timeslot having at the end a guard period, and the main station transmitting timing deviation signals to subsidiary stations within the cell,

    each subsidiary station within the cell adjusting its timing to received timing deviation signals, and adjusting the timing of uplink transmission bursts, and characterised in that

    the main station defines the guard period for a downlink slot followed by an adjacent uplink slot to be longer than the guard period for an

uplink slot followed by an adjacent downlink slot, whereby the cell size is extended.

11. A method according to claim 10 wherein the system is UMTS, and the main station is a Node B, and the subsidiary station is a UE.

12. A method according to claim 10 wherein the sum of the aforesaid guard periods, divided by two, is generally equal to the value of the guard period specified in an existing telecommunications standard.

13. A method according to claim 10 wherein said guard period between an uplink slot and a next following downlink slot is a minimal value, determined by practical timing constraints.

14. A method according to claim 10 wherein a timing deviation signal is transmitted at the beginning of each downlink slot.

15. A method according to claim 10 wherein the subsidiary station determines the time for transmission of an uplink slot from the timing deviation signal provided by the main station and the known period of a downlink signal burst.

16. A method according to claim 10 wherein the system is symmetric, a time frame consisting of single downlink slots separated by single uplink slots.

17. A method according to claim 10 wherein the system is asymmetric, a time frame consisting of an unequal number of downlink slots and uplink slots, wherein the excess of uplink or downlink slots each have an associated guard period equal to the sum of the aforesaid guard periods, divided by two.